

Taming the Web

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ABSTRACT

The World Wide Web (WWW) has become an indispensable part of the modern life, providing many benefits in diverse ways. For instance, the huge amount of information from the web offers people unprecedented levels of opportunities for education, entertainments, social activities, productivity improvements, and business. The web, however, has also become perilous with many dangers, such as privacy violation and security breaches, and therein exist many villains who would like to turn into victims scrupulous as well as casual users. In this regard, WWW has become almost like Wild Wild West, where wonderful opportunities and great perils co-existed.

Tizen (www.tizen.org) is a web-centric open-source, standards-based software platform for smart devices, such as smartphones, smart TVs, IVI (In-Vehicle Infotainment) and other consumer devices like cameras, printers, and more. Tizen is web-centric in that it directly supports web apps - applications (apps) written in HTML5 and Javascript - even outside the web-browsers and provides seamless supports for the web. As such, Tizen not only shares the benefits and perils of the web with other platforms, but also has the additional burden to meet the performance of non-web platforms: platforms that directly support only conventional programming languages. In this talk, we present Tizen's approaches to taming the web to maximize its benefits while minimizing the risks of its perils. We also describe various optimizations of Tizen that enable delivering web-app performance on par with that of non-web platforms.

Categories and Subject Descriptors

D.4.0 [Operating Systems]: General--Tizen

Keywords

WWW; Web; HTML5; smart devices; consumer devices; Tizen

Bio

Dr. Jong-Deok Choi is an Executive Vice President at Samsung Electronics, and manages Samsung's Software R&D Center (SWC) as its Deputy Head.



From December 2011 to December 2013, he was Head of Software Platform Team of SWC, leading the development of the Tizen Open Source Platform for smart devices, such as smart phones, tablets, IVI (In-Vehicle Infotainment), Digital TV, etc. (www.tizen.org). He is a Co-Chair of the Tizen's Technical Steering Group.

Before joining Samsung Electronics, he worked at IBM T. J. Watson Research Center, as a Research Staff Member and Manager. One of the groups he managed at Watson was the High Performance Software Environments group, working on optimizing Web Services.

Dr. Choi is an expert on optimization technologies for Java, C/C++, Javascript and other programming languages; optimizing Web Services; and programming tools for distributed and parallel systems. He was a key contributor to the PTRAN parallelizing-compiler project and the JikesRVM open-source Java virtual machine (JVM), both at IBM Research.

Dr. Choi has published over 60 technical papers, and holds 25 US patents, on subjects such as interprocedural dataflow analysis, pointer analysis, escape analysis of threads, and datarace detection.